Unified Forecast System - Steering Committee (UFS-SC) Meeting
27 April 2018
Telecon - 11:00 AM - 12:00 PM EDT

Attendees:

Ricky Rood (Co-Chair) U. Michigan
Hendrik Tolman NOAA NWS/OSTI
Whit Anderson NOAA GFDL
Ligia Bernardet CIRES;NOAA ESRL/GSD
Jeff Craven NOAA NWS/MDL
Jim Doyle Navy NRL
Georg Grell NOAA ESRL/GSD
Brian Gross NOAA NWS/EMC
Tara Jensen NCAR RAL/JNT
Bill Putman NASA GSFC/GMAO
Ivanka Stajner NOAA NWS/OSTI
Vijay Tallapragada NOAA NWS/EMC
Gerhard Theurich Navy NRL/NESII
Yannick Tremolet JCSDA
Mariana Vertenstein NCAR CGD/CESM
Steve Warren NOAA NWS/OSTI
Jeff Whitaker NOAA OAR/PSD
Ming Xue U Oklahoma

Summary:

The primary agenda topic for the meeting was an update on the status of the proposed governance for the Common Community Physics Package (CCPP) (to include the proposed role of the Strategic Implementation Planning (SIP) Physics Working Group (WG)).

Prior to the presentation on the governance update, several administrative UFS-SC updates and actions were discussed. The UFS-SC co-chairs asked UFS-SC members to review/update (if not already done) the UFS definition at:
https://docs.google.com/document/d/1V4SuWlZMneUY0YJwxhHPhqmxHLgli1jZrifpL1NSLNA/edit?usp=sharing

Additionally, UFS-SC members were asked to review, and edit as appropriate, the projected resources listing for use in the UFS portal (this is a previously documented action). See:
https://docs.google.com/document/d/15W3dQSaYR-O5GQxtfj0UEtjTPdFSC3EwrOYxYtc5EbA/edit?usp=sharing
The goal of the briefing was to receive feedback from the UFS-SC on the proposed governance plan. The briefing was the product of the GMTB team and had been discussed with the SIP Physics WG co-chairs. It was briefed that robust governance is needed to coordinate the use of all UFS elements for the various NCEP applications (Global Forecast System, Seasonal Forecast System, Convective Allowing Model etc). As background, the CCPP vision, structure, and development status were briefed, along with a definition of what is meant by “CCPP-compliant” versus “supported.”

The overall proposed governance plan for CCPP physics was presented. This included the proposed process for candidate physics parameterization review and approval, which recommends establishment of a Change Control Board (CCB) and an Advisory Working Group. Potential criteria for acceptance of parameters into the CCPP were also briefed. A proposed CCPP framework was proposed and a question was posed of whether separate governance was needed for CCPP-physics and CCPP-framework.

A question was asked of whether physics described in the briefing was atmosphere-only physics. The response was that for today, the answer is yes but this can be expanded. Categories of parameters were shown on the CCPP structure diagram. These boxes are intended to be generic and other parameterizations can be included as desired. GMTB work has been focused on the use of the CCPP through the atmospheric model but the CCPP could be used with an ocean model, for example (not being done today by the GMTB). It was briefed that future CCPP releases will include more physics/capabilities (briefed that a cap will be added for use with the FV3, as an example).

The initial CCPP governance proposal suggested that the CCB would likely be significantly populated by NOAA (and possibly more specifically EMC). It was briefed that further discussion was needed on whether the proposed Advisory Working Group would be part of the CCB and whether the CCB/Advisory Working Group would have decision authority. As proposed, a parameterization successfully passing a CCB/Advisory Working Group review would be considered to have successfully met a higher standard for documentation, passed a specified level of testing, and work with the models connected to the CCPP (the number of models would expand in the future). A successful completion of this review is not intended to mean the parameterization would become operational. The operational call was understood to be a a NOAA NCEP decision.
The upcoming Test Plan and Metrics Workshop: July 30- August 1, 2018 was thought to be an opportunity to discuss details of potential metrics for evaluating parameterizations for inclusion into the CCPP.

Proposed next steps for CCPP governance planning were briefed as:

- Assemble CCPP-physics CCB and advisors and write “charter”
- Define criteria for inclusion in supported CCPP
- Define strategy for managing unsupported CCPP-compliant schemes
- Assemble CCPP-framework developers committee (anticipating NCAR-NOAA MOA signing)

Upon completion of the briefing, several comments were made and discussion ensued. A comment was made that if the briefed Vision slide is used in future briefings, it should emphasize a focus on suites (this would highlight how it is different from the WRF effort, particularly in terms of testing).

Agreement was expressed regarding the proposed governance structure, at least at the higher level of the concept, and the need to have physics and infrastructure separate. Concern was stated, however, with regard to how to bring in the outside world (how to involve the broader community in the governance). It was understood that NOAA funding should be generally applied to support efforts destined for operations but there was a stated desire to avoid sustaining an impression that a particular operational system is being pushed on the community. It was stated that we don’t want to give the impression that EMC is controlling everything - would like to express that the community has a stronger role. GMTB representatives agreed on this need. Potential collaborations for the CCPP will be coming in from the broader community. But the question again lies with who will make decisions on approving candidate parameterizations (Will the CCB be more centered on EMC? Will the Advisory Working Group have the greater community emphasis (this was the briefed approach)?)? It was commented that once the NOAA/NCAR MOA is signed, NCAR might have a greater role in the infrastructure part of the governance.

For an acceptable governance approach to the community, it was commented that there will have to be path for a researcher, working with their own funding, to have their work incorporated into the CCPP (in turn, allowing access to their work by the broader community). The general UFS paradigm was thought to apply here (allowing various operational bodies easy access). A note of caution was mentioned that there should be a mechanism for incorporation but there is a danger of saying/implying that anybody that does work can get their work incorporated. A review/bake-off was believed to be needed. Otherwise, the result could quickly become an unmanaged system. It was stated that the extreme approach at either end (open vs restricted) was not desirable. Policy for a clear path to incorporation into the CCPP is needed, along with explicit details on levels of maintenance needed (and by whom) for included parameterizations.
A question was asked regarding the outcome of the proposed CCPP - what is the end state (a Single Column Model and suites of physics, for example)? A response was given that coupling between physics and dynamics can't be ignored, and the flexibility was thought to exist within the CCPP to support some related investigations. It was noted that during the NGGPS Dynamic core (dycore) Test Group activities, the complexity of coupling between physics and the FV3 and MPAS dycores was noted (a subject of experimentation). From the GMTB perspective, the CCPP is not prescribing a methodology for coupling to dycores. It provides a portfolio of physics packages that are available for use with models as needed. It was noted that the GMTB needs to better understand additional requirements for flexibility, but the GMTB believes they have these considerations mostly covered (flexibility in calls, etc). A question was asked regarding how flexibility for adding interstitial routines is included. The GMTB mentioned several options that are available but thought work on interstitials will evolve going forward as experience is gained (more effective ways to be considered). It was thought that as the framework becomes more capable, the need for interstitials will be reduced.

The way ahead for the CCPP governance was discussed. A comment was made that some of the relevant questions from the meeting discussion may fit within the FAQ collective being developed. There was a continuing question about the role, make-up, and relationship between the CCB and the Advisory Working Group. And there was a question of whether the SIP Physics Working Group would fit into configuration management within the CCB or the Advisory Working Group or both. There appeared to be a majority opinion that more “community” is needed in the CCB. This could translate to the Advisory Working Group having a more central role in the CCB. The role of separation versus combination of the CCB and the Advisory Working Group needs more exploration. Some role separation between these groups may be driven by regulations governing federal funding decisions. Action: Ligia Bernardet will follow-up with the Physics WG and others such as the UFS-SC co-chairs and NGGPS Program Office leads as necessary to move the proposed CCPP governance forward. It was also noted that other SIP working groups will have an interest/role in the proposed governance (system architecture/infrastructure related issues and modeling coupling issues are involved, for example).

Upcoming UFS-SC agendas: 4 May - Briefing on Subseasonal to Seasonal (S2S) activities; 11 May - Briefing/update on verification workshop plans and other key SIP Verification and Validation WG activities; 18 May - Synthesis meeting with invitation to SIP WG co-chairs, UFS-SC liaisons, and others as appropriate.